

ENVERTECH EVT360

ENVERTECH EVT360 360W Micro-Inverter User Manual

Model: EVT360

1. INTRODUCTION

The ENVERTECH EVT360 is a 360W micro-inverter designed to convert direct current (DC) electricity generated by solar photovoltaic panels or small wind turbines into alternating current (AC) electricity. This AC power can then be fed into your home's electrical grid, reducing your reliance on grid power. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your EVT360 micro-inverter.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the EVT360 micro-inverter. Failure to follow these instructions may result in electric shock, fire, serious injury, or property damage.

- **Qualified Personnel:** Installation and maintenance should only be performed by qualified personnel with electrical experience.
- **Electrical Hazard:** The micro-inverter generates high voltage AC power. Always disconnect both DC and AC power sources before servicing.
- **Grounding:** Ensure the micro-inverter is properly grounded according to local electrical codes.
- **Grid Disconnection:** For safety, the micro-inverter will automatically shut down and cease power production if the utility grid power is lost. This prevents back-feeding the grid during an outage.
- **Environmental Conditions:** Do not immerse the micro-inverter in water or expose it to flammable substances.
- **AC Module Solution:** The design of this micro-inverter helps mitigate risks of electric shocks and fires on your roof by converting DC to AC at the module level.

3. PRODUCT OVERVIEW

The ENVERTECH EVT360 micro-inverter is a compact and robust device designed for outdoor use. It features a single Maximum Power Point Tracking (MPPT) channel to optimize power harvest from one solar panel or small wind turbine.

Components:

- **DC Input Connectors:** For connecting to the solar panel or wind turbine.
- **AC Output Cable:** Pre-assembled cable for connecting to the electrical grid.
- **LED Indicator:** Provides status feedback on the inverter's operation.
- **Mounting Bracket:** For secure attachment to a racking system or structure.

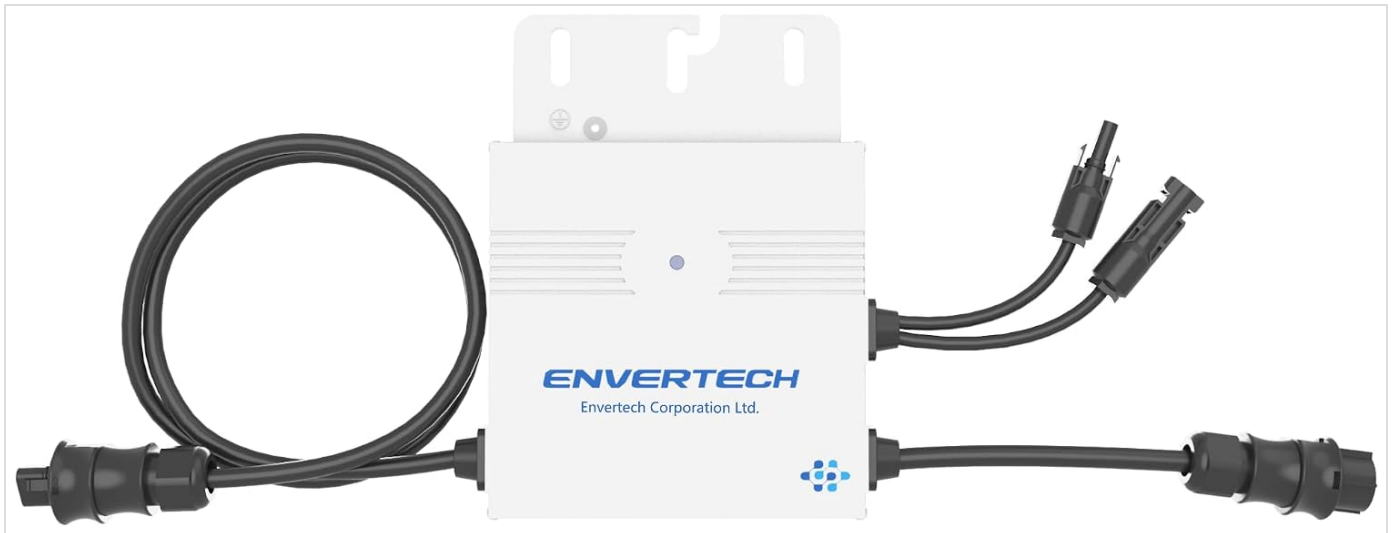


Figure 1: Front view of the ENVERTECH EVT360 Micro-Inverter showing DC input and AC output cables.



Figure 2: Top view of the EVT360 Micro-Inverter, displaying the product label with technical specifications.

4. SETUP AND INSTALLATION

The EVT360 micro-inverter is designed for straightforward installation. Refer to the diagram below for a visual guide.

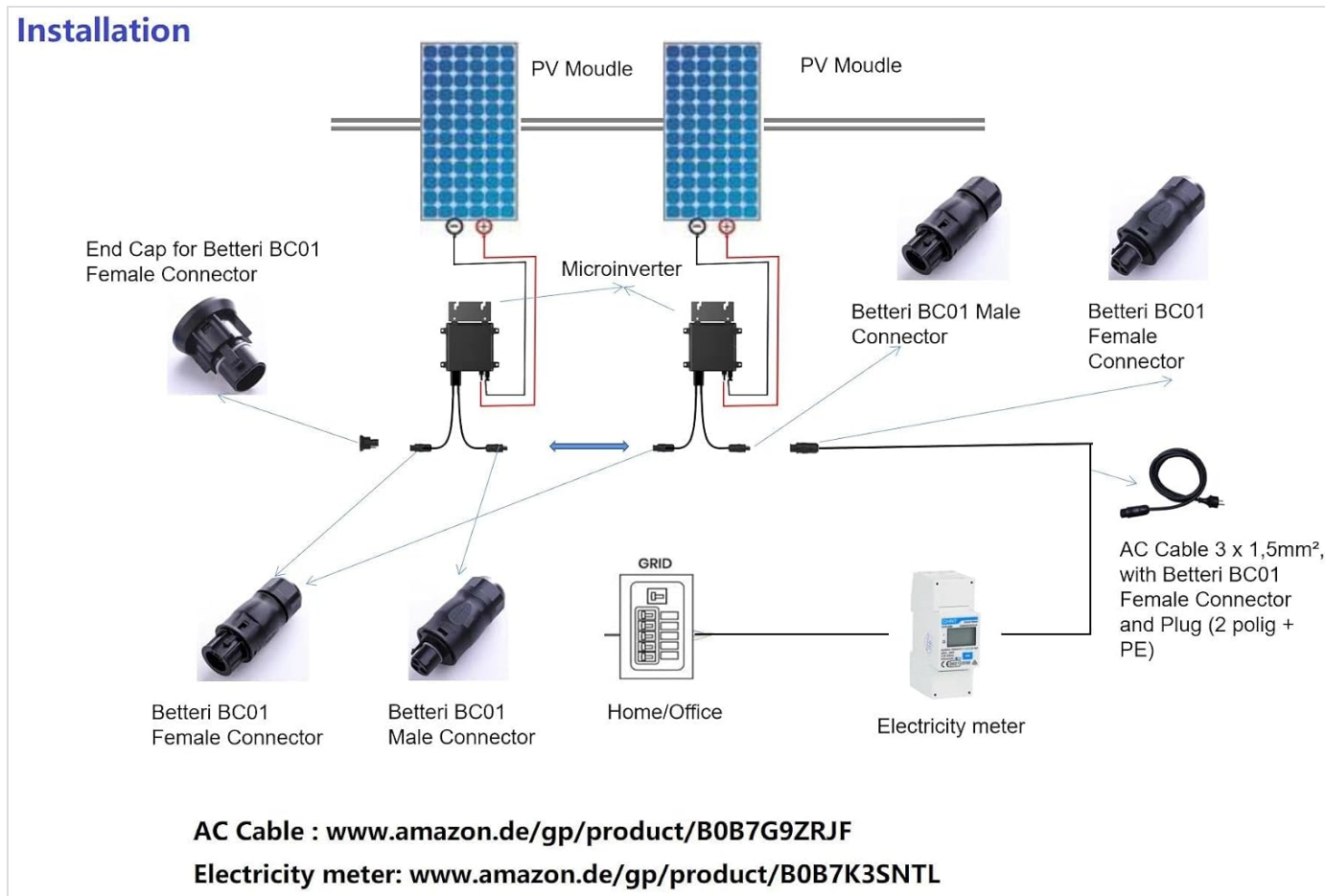


Figure 3: Typical installation diagram for the EVT360 Micro-Inverter with solar panels and grid connection.

Installation Steps:

1. **Mounting:** Securely mount the micro-inverter to your solar panel racking system or a suitable structure. Ensure adequate ventilation and protection from direct sunlight if possible, though the unit is rated for outdoor use.
2. **DC Connection:** Connect the DC output cables from your solar panel (or small wind turbine) to the DC input connectors on the EVT360. Ensure correct polarity (+ to + and - to -). The recommended module power is 180W to 450W, and the DC input voltage range is 16V to 60V.



Figure 4: Close-up view of the DC input connectors.

3. **AC Connection:** Connect the pre-assembled AC output cable from the micro-inverter to your electrical grid. This typically involves connecting to a dedicated circuit or an existing outlet, following local electrical codes.



Figure 5: Close-up view of the AC output connector.

4. **System Check:** After all connections are made, verify that all cables are securely fastened and that there are no exposed wires.

5. OPERATING INSTRUCTIONS

The EVT360 micro-inverter operates automatically once properly installed and connected to both a DC power source and the AC grid.

Startup Sequence:

1. Upon receiving sufficient DC power from the solar panel and detecting a stable AC grid connection, the inverter will begin its synchronization process.
2. During synchronization, the LED indicator on the inverter will typically glow **red**. This process can take approximately 5 minutes.
3. Once synchronized with the grid, the inverter will start converting DC power to AC power. The LED indicator will then flash **green**. The rate of flashing indicates the power output level; a faster flash rate signifies higher power production.

Normal Operation:

The EVT360 continuously monitors the DC input and AC grid conditions to optimize power production. It will automatically adjust its output to maximize energy harvest from your solar panel throughout the day, from early morning to late evening, thanks to its efficient MPPT technology.

6. MAINTENANCE

The ENVERTECH EVT360 micro-inverter is designed for minimal maintenance. Regular inspections can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the micro-inverter and all cables for any signs of damage, wear, or corrosion.
- **Cleaning:** Keep the exterior of the micro-inverter clean. Use a soft, damp cloth to wipe away dust or debris. Do not use harsh chemicals or abrasive materials.
- **Ventilation:** Ensure that the area around the micro-inverter is clear of obstructions to allow for proper airflow and heat dissipation.
- **Connections:** Verify that all DC and AC connections remain tight and secure.

The EVT360 has an IP67 rating, indicating it is protected against dust ingress and immersion in water up to 1 meter for 30 minutes, making it suitable for harsh outdoor conditions.

7. TROUBLESHOOTING

If your EVT360 micro-inverter is not operating as expected, refer to the following troubleshooting guide:

Common Issues and Solutions:

- **Inverter Not Starting / No Power Output:**
 - **Check DC Input:** Ensure the solar panel or wind turbine is producing sufficient voltage (within 16V-60V DC). Note that some users report more reliable startup above 24V DC.
 - **Check AC Grid Connection:** Verify that the micro-inverter is properly connected to a live AC grid and that there are no tripped breakers.

- **Synchronization Time:** Allow up to 5 minutes for the inverter to synchronize with the grid after power-up. The LED will be red during this period.
- **Low Power Output:**
 - **Shading:** Check if the solar panel is shaded by trees, buildings, or debris.
 - **Panel Cleanliness:** Ensure the solar panel surface is clean and free of dirt or dust.
 - **Panel Wattage:** Confirm the connected panel's wattage is within the recommended range of 180W-450W.
- **LED Indicator Status:**
 - **Red LED (Solid or Flashing):** Indicates synchronization in progress or an error. If it persists after 5 minutes, check DC and AC connections.
 - **No LED:** The inverter is not receiving power (either DC input or AC grid connection is absent).
 - **Green LED (Flashing):** Normal operation, producing power.
- **Connectivity/Monitoring Issues:** The EVT360 does not inherently offer smart connectivity for monitoring without additional equipment (e.g., an ENVERTECH EVBE300 gateway). For basic monitoring, a smart plug with energy measurement capabilities can be used.

If you continue to experience issues, please contact ENVERTECH customer support or your installer.

8. SPECIFICATIONS

Feature	Specification
Brand	ENVERTECH
Model Name	EVT360
Recommended Module Power	180 - 450W
Maximum Output Power	360W
DC Input Voltage Range	16V - 60V
AC Output Voltage	220V - 230V
Frequency	50 Hz
Maximum Efficiency	95.6%
MPPT Channels	1
IP Rating	IP67
Operating Temperature	-40°C to +65°C
Dimensions (L x W x H)	16.3 cm x 21.6 cm x 2.7 cm

Feature	Specification
Weight	1.8 kg
Output Waveform	Pure Sine Wave
Included Components	Pre-assembled AC cable
Certifications	VFR 2019, VDE-AR-N 4105, VDE 0126-1-1, CEI 0-21, IEC/EN61000, IEC/EN62109-1/2, EN50549-1/2019, TOR 2019, C10/11:2019, UTE C15-712-1:2013

9. WARRANTY

The ENVERTECH EVT360 Micro-Inverter comes with a 15-year manufacturer's warranty. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, refer to the documentation provided with your product or visit the official ENVERTECH website.

10. SUPPORT

For technical assistance, product inquiries, or warranty support, please contact your product supplier or the ENVERTECH customer service. Ensure you have your product model (EVT360) and serial number available when contacting support.

You can find more information and contact details on the official ENVERTECH website: www.envertech.com